Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3589	705/39-45.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:06
L2	526	283/58.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:07
L3	4533	235/375.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:07
L4	2795	235/379.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:07
L5	1139	235/381.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:07
L6	285	379/93.12.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:07
L7	89	379/93.18.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 18:07

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	(routing adj number) same ((accounting or check) adj number) same (compar$3 or check$3 or verify$3) and ((edit$ or modify$3) near5 ((accouting or check or routing) adj number))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 15:45
L2	8	(routing adj number) same ((accounting or check) adj number) same (compar$3 or check$3 or verify$3) and ((edit$ or modify$3) near5 (accouting or check or routing))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 15:46
L3	21	(routing adj number) same ((accounting or check) adj number) same (compar$3 or check$3 or verify$3) and ((edit$ or modify$3) same (accouting or check or routing))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/11/21 15:46

NPL Search 09/542109 11/21/05

Set	Items	Description
S1	426	(VERIF????? OR CHECK????? OR CONFIRM???) (5N) (ROUTING (1W) NUMBER)
S2	11	S1 AND PY<1992
S3	11	RD S2 (unique items)

File Listings

File 15:ABI/Inform(R) 1971-2005/Nov 21
(c) 2005 ProQuest Info&Learning
File 9:Business & Industry(R) Jul/1994-2005/Nov 18
(c) 2005 The Gale Group
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 275:Gale Group Computer DB(TM) 1983-2005/Nov 18
(c) 2005 The Gale Group
File 476:Financial Times Fulltext 1982-2005/Nov 22
(c) 2005 Financial Times Ltd
File 610:Business Wire 1999-2005/Nov 21
(c) 2005 Business Wire.
File 624:McGraw-Hill Publications 1985-2005/Nov 21
(c) 2005 McGraw-Hill Co. Inc
File 636:Gale Group Newsletter DB(TM) 1987-2005/Nov 21
(c) 2005 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2005/Nov 21
(c) 2005 The Gale Group
File 613:PR Newswire 1999-2005/Nov 21
(c) 2005 PR Newswire Association Inc
File 813:PR Newswire 1987-1999/Apr 30
(c) 1999 PR Newswire Association Inc
File 16:Gale Group PROMT(R) 1990-2005/Nov 21
(c) 2005 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
(c) 1999 The Gale Group
File 634:San Jose Mercury Jun 1985-2005/Nov 18
(c) 2005 San Jose Mercury News
File 148:Gale Group Trade & Industry DB 1976-2005/Nov 21
(c)2005 The Gale Group
File 20:Dialog Global Reporter 1997-2005/Nov 21
(c) 2005 Dialog
File 35:Dissertation Abs Online 1861-2005/Oct
(c) 2005 ProQuest Info&Learning
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
(c) 2002 The Gale Group
File 65:Inside Conferences 1993-2005/Nov W3
(c) 2005 BLDSC all rts. reserv.
File 2:INSPEC 1898-2005/Nov W2
(c) 2005 Institution of Electrical Engineers
File 474:New York Times Abs 1969-2005/Nov 20
(c) 2005 The New York Times
File 475:Wall Street Journal Abs 1973-2005/Nov 18

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         (c) 2005 The New York Times
File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Oct
         (c) 2005 The HW Wilson Co.
File 348:EUROPEAN PATENTS 1978-2005/Nov W01
         (c) 2005 European Patent Office
File 349:PCT FULLTEXT 1979-2005/UB=20051117,UT=20051110
         (c) 2005 WIPO/Univentio
File 347:JAPIO Nov 1976-2005/Jul(Updated 051102)
         (c) 2005 JPO & JAPIO
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Set	Items	Description
S1	426	(VERIF????? OR CHECK????? OR CONFIRM???) (5N) (ROUTING (1W) NUMBER)
S2	11	S1 AND PY<1992
S3	11	RD S2 (unique items)

? t s3/7,k/1-11

3/7,K/1 (Item 1 from file: 15)

00558526 91-32883

A Sharper Image for ATMs

Slater, Robert Bruce

Bankers Monthly v108n7 PP: 30-31 Jul 1991 CODEN: BNKMAK ISSN: 0005-5476 JRNL CODE: BKM
DOC TYPE: Journal article LANGUAGE: English LENGTH: 2 Pages
WORD COUNT: 998

ABSTRACT: Many bank customers are reluctant to use automated teller machines (ATM) to make deposits. In an attempt to allay these customer fears and to bring the highest level of service to the banking public, PNC Financial Corp. is embarking on a revolutionary program to bring image technology to ATMs. When a customer inserts a check for deposit, the new ATM will display an image of the check on the screen for customer verification. The new ATM also will be able to read the magnetic ink character recognition (MICR) coding. This capability will allow PNC to place ATMs at manufacturing facilities or corporate office parks and to authorize cash payment of company payroll checks regardless of whether the employee has a PNC account. Michael L. Douglas of CSC Financial Services (Louisville, Kentucky) says that the machines can provide 70% of the types of transactions provided by a human teller. PNC is only market testing one machine at first, but Douglas thinks it could eventually replace 1/2 of the bank's ATM network.

TEXT: A YOUNG writer drives to his local branch office and uses an in-the-wall ATM unit to withdraw some weekend spending money. After completing the withdrawal, he then enters the branch office and hands over his paycheck and deposit slip to a human teller, gets his receipt, and goes about his business. Our friend enjoys the convenience of getting his cash without having to write a check or withdrawal slip and thus uses the ATM for this purpose. Yet, he is reluctant to use the machine to deposit his check despite the ATM's capability to complete such transactions.

Our friend feels much more confident getting a deposit receipt from a person who has verified the amount of his check than he would were he to merely slip his hard-earned pay slip into a hole in the wall and not get immediate assurance that all was well.

Granted, the neurosis of this customer might be a bit strange but his fears are not uncommon. The refusal to use ATMs for deposits creates problems for both the customer and for the bank. Customers are required to make their deposits during branch banking hours only, which, for many people who are paid on Friday, means they must hold onto their check until Monday morning. For banks, the customers' uneasiness about using ATMs for deposits means greater demands on their human tellers and could possibly mean greater staffing requirements. It's not an ideal situation for either party.

New Era for ATMs

In an attempt to allay these customer fears and to bring the highest level of service to the banking public, PNC Financial Corporation is embarking on a revolutionary program to bring image technology to the ATM arena. In conjunction with InterBold -- the consortium of IBM and Diebold, Inc. -- which will provide the hardware, and Applied Communications, Inc., which will develop the software, PNC plans to market test the latest innovation in both image and ATM technology at a branch in Pittsburgh early next year.

Here's how it will work. A customer will slide his check through a slot in the machine. The ATM will then lift the image of the check and display it on the screen for customer verification. The machine will also read the MICR coding.

The customer can then deposit his check into any one of his accounts, cash the check to the penny, or deposit some of the check amount and receive cash for the remainder. The fact that the machine actually displays the image of the check serves as a verification to the customer that the bank has received the check and that the deposited amount is correct.

"We did some market research and found that people -- especially older people who don't have a lot of computer literacy -- feel that their check is going into a black hole," explains Michael L. Douglas, president of CSC Financial Services in Louisville, Kentucky, a subsidiary of PNC Financial. Douglas has responsibility for overseeing this ATM project for the entire corporation. "The imaging capability allows us to show the customer we have his check," Douglas continued, "and this should be a significant advancement in eliminating the level of resistance that consumers have in placing checks in this type of equipment."

The ability of the new ATM to read the MICR coding gives the machine additional advantages. For instance, customers can prearrange with the bank to have certain types of checks such as payroll, Social Security, or corporate dividends, registered under their name. When the machine reads the **routing number** and **verifies** the customer's PIN, it can then cash the check.

This capabiliry will allow PNC to place ATMs at manufacturing facilities or corporate office parks and to authorize the cash payment of company payroll checks regardless of whether the employee has an account with PNC.

Douglas says that the machines can provide 70 percent of the types of transactions provided by a human teller. Acceptance of the machines will "free our tellers from simple transactions and allow them to deal with more complex issues and, most important, to cross-sell our customers into other services," explains Douglas.

PNC is not concerned that increased use of automation, and thus decreased human contact with their client base, will hinder cross-selling efforts. Douglas feels that people who want to conduct simple deposit and withdrawal functions want to get in and out efficiently and quickly and do not want to be bothered with pitches for other products or services. PNC believes it can use incentives to get its customers into the branch to buy other products or services without having to "annoy" them every time they make a deposit.

In the future, the image lifted by the ATM for display may be used for

check truncation, eliminating the paper check from the pipeline at the original contact point. The captured image would then be sent to the proof and deposit arena and even on to the Federal Reserve clearing system. "This would produce dramatic back-office cost savings," says Douglas, "but it is something for the future." The new ATM check images could also be saved and used for check image statements at some time in the future.

PNC is only market testing one machine at first but Douglas thinks this ATM "may turn out to be the machine of choice" for PNC and could eventually replace half of the bank's 550 ATM network. "We do not have the market research data that says this is going to be a phenomenal success," says Douglas. "We admit there is a risk but we are confident the development effort will turn out to be a good decision. We are truly excited about this piece of equipment and are anxious to offer it to our customers to see if they share our excitement. We think they will."

Maybe our writer friend will move to Pittsburgh to take advantage of this new technology and thus shorten his banking routine. I doubt it. Phobias are hard to kill.

...TEXT: payroll, Social Security, or corporate dividends, registered under their name. When the machine reads the **routing number** and **verifies** the customer's PIN, it can then cash the check.
This capabiliry will allow PNC...

3/7,K/2 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00075427 78-09758
Checkmate for Exception Items: ABA, BAI, Fed Urge Check Digit to Reduce Check Processing Rejects
Listfield, Robert J.
Bank Systems & Equipment v15n3 PP: 46-49 March 1978 ISSN: 0005-5050
JRNL CODE: BSE
DOC TYPE: Journal article LANGUAGE: English

ABSTRACT: Beginning July 1, 1978, a check digit will be added to the **check routing number** field on the MICR-coded band. The Federal Reserve, the Bank Administration Institute, and the American Bankers Assn. agreed on this measure and are considering adding a **check** digit in the **routing number** field will automatically help read an unreadable MICR figure and cut down on rejects in check processing. This improvement will cut labor and costs and speed up collections. Processors will have to accommodate the old 8-digit figures until the stock of such items is depleted. This mixed format may cause some processing delays. To avoid problems, the MICR-encoded 9-digit routing symbol should not be used before July 1, 1978, and software development and testing of the new check digit logic can be started immediately.

ABSTRACT: Beginning July 1, 1978, a check digit will be added to the **check routing number** field on the MICR-coded band. The Federal Reserve, the Bank Administration Institute, and the American Bankers Assn. agreed on this measure and are considering adding a **check** digit in the **routing number** field will automatically help read an unreadable MICR figure and cut down on rejects in...

01309801 SUPPLIER NUMBER: 07681036 (THIS IS THE FULL TEXT)
Fed backs credit unions on payable terms. (Federal Reserve Board of Governors, bank payable through drafts)
DeBow, Yvette
Computers in Banking, v6, n9, p14(3)
Sept, 1989

TEXT:

Fed Backs Credit Unions On Payable Thrus WASHINGTON, D.C.--On July 28, the Federal Reserve Board of Governors adopted two amendments to Regulation CC regarding the treatment of bank payable through checks. The final ruling by the Fed is in direct contrast to the banking community's position, which stressed an automated solution for the determination of availability for these items. (See "The Impact of Reg CC: Who Benefits," April 1989, p. 44.)

Payable through drafts are items processed at one of five end-points in New York and Minnesota. These items bear the route and transit number of the processor on the MICR line, not the institution from which it is drawn. As a response to the difficulties of processing these items, the Fed adopted the two amendments to Reg CC: First, bank payable through checks must be conspicuously labeled with the name, location, and first four digits of the nine-digit routing number of the bank on which the check is written [the original proposal required all nine digits to be included] and the legend "payable through" followed by the name and location of the payable through bank. This amendment takes effect February 1, 1991. Second, a bank issuing the payable through checks bears the risk of loss for returns from a non-local payable-through bank in cases where the return from the non-local payable-through bank took longer than the defined expedited return time limit for the bank on which it is written. The test for expedited return would be based on the two-day/four-day test specified in Reg CC. This amendment will go into effect February 1, 1990.

The Fed based its decision on 763 comment letters received from various groups, including banks, credit unions and trade associations, on four proposals--from whih these two were chosen. The problem, according to bankers, is that when processing and applying holds electronically, these items may receive non-local treatment, when they are in fact local items.

Generally, the comment letters recevied from the banks supported the adoption of all the proposals. But there were strong opinions expressed by the bankers for the adoption of the proposal that would have required the bank payable through **checks** to bear a **routing number** in the MICR line local to the bank on which the check was written, and to be presented locally. "This one wak key to our position," says Willis I. Else, senior vice president, operations for Cleveland-based National City Bank. "The other three were nice to have, of which we got two."

In making its determination against requiring the routing number on the MICR line to be local, the Fed found with the credit unions based upon their arguments that doing so would dismantle the entire payable through system while only providing a modicum of improvement in the banks' position. "The credit unions' system's position has been all along that the alleged operation problems and additional risk were not near as bad as the Fed and the bankers were asserting," says Durant S. Abemethy III, senior vice president and general counsel for the Credit Union National Association (CUNA), Madison, Wis. "And it clearly did not warrant dismantling the payable through system." According to Abemethy, payable

through drafts account for 2% to 3% of all the items processed by banks and the Federal Reserve system, and have a return rate of less than one percent.

A study conducted in November 1988 by the Rolling Meadows, Ill.-based Bank Administration Institute found that only 8.3% of the institutions surveyed adopted policies that called for delayed availability on most deposits. Over 90% of the institutions grant same day or next day availability, and where delayed availability exists it is on a case-by-case basis. A similar study by the Fed found that 75% of the banks used this plan of action. "If you go to the argument that [banks are] in an automated environment to assign holds, you might make a case that those operational problems and the risk warrant dismantling us. The fact is that [banks] are not in a machine-read environment when it comes to assigning holds," says Abemethy.

But, there are institutioons which assign holds electronically. "An institution like ours is dead in the water [without a local routing number on the MICR line] because we are automated as well as not necessarily being a next day bank," says Jeff Paul, vice president/compliance officer for Bethesda, Md.-b ased Sovran Bank. Sovran has an automated hold policy for deposits over $2,500. "Although the percentage of our customers that would be affected is small, we still want to be able to read the items electronically, and not be forced back to a manual system."

Banks are given some relief by the second amendment, which puts the onus of expeditious return on the paying bank. "It doesn't alleviate the problem, but it does make it more palatable," says Else. "In a sense it establishes some equity, by making the guy who caused the problem responsible for any losses."

New Headaches

Else also points out two additional problems that are lurking in the background. These amendments were in response to a suit brought by CUNA and the Dearborn Federal Credit Union, Mich., against the Federal Reserve, indicating that Reg CC did not follow EFAA (Expedited Funds Availability Act) to the letter. But share drafts, which this addresses, are not the only items where the routing number on the MICR line does not necessarily correspond to the locality of the bank on which it is drawn. There are a number of banks that use the routing number of their processing center on the MICR line as opposed to the branch. "If this issue came up in the courts, and the Fed was forced to make this provision applicable for all items, the problem could increase dramatically," says Else.

The second issue is related to the other proposal rejected by the Federal Reserve which would have allowed depositing banks to present share drafts directly to the credit union on which they are drawn. "Some legal authorities think that under the UCC (Uniform Commercia Code) you could present items directly to the credit union and insist upon payment. If this ever comes up in court--and is upheld--it will be a curious factor that the Fed did not approve this proposal," Else adds.

"The interesting point in all this is that the Federal Reserve sided with an industry they don't regulate, against one that they do," says Else. Judging by the Federal Reserve's report, the credit unions came armed with figures and statistics to back their position, as well as Congressional support. The American Bankers Association is seeking relief for its members regarding the payable through amendments.

...ABSTRACT: banks issuing payable through checks bear the losses on returns. Another proposal requiring payable through **checks** to have a **routing number** local to the bank where the check originated in the MICR line was denied by...

... bankers for the adoption of the proposal that would have required

the bank payable through **checks** to bear a **routing number** in the MICR line local to the bank on which the check was written, and...

19890900

3/7,K/4 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01299313 SUPPLIER NUMBER: 07355076 (THIS IS THE FULL TEXT)
Check processors deal with image at conference. (Bank Administration Institute's 12th annual check processing conference)
Hellauer, Brian
Computers in Banking, v6, n6, p14(3)
June, 1989

TEXT:
Check Processors Deal With Image At Conference SAN ANTONIO, Texas--With most of the clamor caused by the implementation of Regulation CC gone, if not forgotten, the approximately 650 bankers at the Bank Administration Institute's (BAI) 12th annual check processing conference turned their attention to matters of strategy and tactics, rather than compliance. Sixteen concurrent sessions at the conference, held at the Convention Center here April 4-7, covered topics ranging from the use of image technology in processing checks, to check truncation, to reducing float and risk management.

Judging from the results of a study recently completed by the BAI, it looks as if image technology will soon change the nature of check processing. Danette Niedospial, BAI research manager, discussed the results of the study, conducted in conjunction with Unisys Corp., which attempted to gauge the interest of $1 billion-plus-asset commercial banks in image processing technology.

According to that study, widespread use of image processing is only two to four years away. Half of the respondents said they would install an image system for check processing between 1991 and 1993, while a whopping 96% said they were either already using such a system or would do so eventually. The banks that attempted to estimate costs expect to spend anywhere from $2 million to $5 million or more on implementing the technology, with half the banks expecting a payback period of less than three years.

A vast majority of the banks surveyed also expect to be using image technology in their lockbox operations as well. More than 20% of the respondents said they were already using image technology for lockbox, and another 50% said they expected to introduce the technology between 1990 and 1993. As the bankers surveyed saw it, the primary benefits of image technology applications will be increased productivity, better customer service, and lower costs.

Another session at the conference which dealth with the basics of image processing also drew a large crowd. Craig Sparkes, a product manager at TRW Financial Systems, Berkeley, Calif., explained how images are captured, stored, and associated with logical data records for later retrieval. Sparkes noted that while the technology is actually not that new, having been around for more than a decade, it has not been fully explored. "Image is an incredibly versatile and usable technology. The same architecture that works for [processing] remittance and drafts works for checks," said Sparkes.

During the conference, TRW Financial Systems also announced that it had signed a cross-licensing agreement with IBM that could entail

Developing products based on image technology. Under the terms of the agreement, TRW would add to its existing base of imaging products by developing systems that either use or complement IBM's Image Plus image processing system.

Not all of the sessions dealt with what might be considered cutting edge technology, though. Don Cohenour, vice president of operations at the U.S. Central Credit Union, Overland Park, Kan., spoke about his bank's successful check truncation program. Cohenour explained how his institution is one of 41 central credit unions throughout the nation that act as a clearing house for corporates share drafts, the credit union equivalent of checks. While U.S. Central has been truncating share drafts since 1983, for the past three years the task has been handled by the federal Reserve Bank in Kansas City, allowing the credit union to reduce the amount of storage space it needed by 90%.

Since the Fed took over truncation, U.S. Central also has been able to increase the number of correspondent credit unions it processes from 1,600 to 2,100, without adding any additional personnel. "Electronic presentment of checks is going to be the wave of the future," concluded Cohenour. But, he added that "you have to make the consumer understand why it's in their best interest not to receive the canceled check. You also have to have a good system so the consumer understand he can get a copy of a check."

While compliance with Reg CC wasn't as much of an issue as it was last year, there was a discussion of bankers' compliance with the American Bankers Association's new routing number policy. The routing number identifies where negotiable items must be presented. In the past, "there was no teeth in it [the policy'. In fact, those institutions that complied with it probably found themselves at a competitive disadvantage," noted William R. Boone, chairman of the routing number administration board and an executive vice president at Deposit Guaranty National Bank, Jackson, Miss.

The goal of the new policy, said Boone, is to reduce the number of routing numbers now in use, so items can be handled in as direct a manner as possible. Depository financial institutions will now be required to demonstrate a need for more than one routing number. The ABA hopes to achieve compliance with the new policy within three years. What about those that don't comply? Boone says the consequences are ultimately up to the Federal Reserve, but he noted that the Fed's "ultimate big stick" might be to refuse to handle any **check** imprinted with an invalid **routing number** .

Among the new products announced at the conference, Lundy Financial Systems demostrated its Modular Reader Sorter Power Encoder Transitor (MRS/PET). The product, which can handle from 450 to 1,000 documents per minute, adds power encoding "on the fly" to a reader sorter. The company says such a combination will aid the transition to image processing. The initial version of the MRS/PET is designed for remittance processing applications, while subsequent versions will handle proofing or general check processing.

... noted that the Fed's "ultimate big stick" might be to refuse to handle any **check** imprinted with an invalid **routing number** .

Among the new products announced at the conference, Lundy Financial Systems demostrated its Modular Reader...

19890600

3/7,K/5 (Item 1 from file: 636)

01653834 Supplier Number: 42589742 (THIS IS THE FULLTEXT)
WORK CONTINUES BEHIND THE SCENES FOR
Item Processing Report, v2, n24, pN/A
Dec 12, 1991
TEXT:
For the past two or three decades, the financial industry has heard about the looming demise of checks. In its stead there would emerge a "checkless society," in which all financial transactions are performed electronically.

It hasn't happeed last year, but it still continues to thrive at a rate of 2 percent to 3 percent.

The interest in image technology, particularly image check statements, has overshadowed the interest in check truncation, a method used by credit unions for years, despite the fact that it's an extremely low-cost, easy method of reducing postage costs. No fancy, cutting-edge technology is needed; all the financial institution has to do is inform its customers that they will no longer be receiving their canceled checks.

Bankers cite the American public's love of paper as one of the main reasons for not truncating their customers' checks; but often this love of paper is in the minds of bankers, not consumers. Money has a unique way of swaying opinions; offer consumers a monetary incentive for letting the bank keep the checks, and then see what's most popular.

Credit unions, ever since they began offering share drafts (the equivalent of checks) in 1985, have been truncating paper. At a recent Check Image/ /MICR Data Capture seminar in New York, sponsored by White Papers Inc., Dirck VanDeusen, a vice president of Empire Corporate Federal Credit Union, noted that of the more than 2 million items it processes monthly for 190 credit unions, 99.5 percent are truncated. Only about 6.5 photocopies are requested for every 10,000 share drafts.

When a payee presents the draft to his bank for payment, the payee's bank encodes the amount of the item onto the draft's MICR line, microfilms the front and back of the draft, and presents it to the local clearing house for collection. The local clearing house then presents the draft to the Federal Reserve Bank's (Fed) Regional Check Processing Center (RCPC) for further presentment to a local RCPC. In turn, the local RCPC presents the draft to Empire for processing.

Drafts received by Empire are run through an IBM 3892 reader/ sorter to capture the MICR line. The drafts are then filmed and each is sprayed with a document identification number (DIN). Thecaptured informationis transmitted daily to member credit unions. The checks themselves are kept for only 90 days, and then are shredded or recycled, depending on the site. Microfilmed copies are kept for seven years.

The DIN makes it easy for member credit unions to call and request a share draft copy. Empire charges $1 per photocopy.

Replacing Paper With Electronic Checks

Another compromise between electronics and paper is to get rid of the actual paper check by replacing it with a point of sale (POS) terminal on which is displayed what appears to be a check. Scott Klement, a product manager at NCR, recently explained how the system could work: a customer's check cashing card accesses the customer's checking account number, automated clearing house (ACH) **routing number** and **check** image information. A signature capture unit then displays an image of a customer's check for signature. The customer uses a special pen to sign the electronic check image, which is then stored, possibly by a third party, for dispute resolution or re-creation for printing on the customer's monthly statement.

The benefits to the consumer include faster lines at checkout, no

personal identification number (PIN) to remember, and cost savings. Benefits to the bank/ACH processor include the promotion of ACH transactions, the elimination of paper check processing and accounting errors due to misread checks, and the individual authorization of ACH transactions. The retailer gets the benefits of reduced check-out time, elimination of handling and preparation of checks, speeded access to funds, and elimination of errors in reading the check amount. NCR plans to begin a pilot using electronic checks next year. (Scott Klement, NCR, 614/439-0118).

... s check cashing card accesses the customer's checking account number, automated clearing house (ACH) **routing number** and **check** image information. A signature capture unit then displays an image of a customer's check...
19911212

3/7,K/6 (Item 2 from file: 636)

01079219 Supplier Number: 40690416 (THIS IS THE FULLTEXT)
TRX FORMAT MAKES ITS DEBUT
Corporate EFT Report, v9, n4, pN/A
Feb 22, 1989
TEXT:
The National Association for Check Safekeeping (NACS) and the National Automated Clearing House Association (NACHA) have developed a new automated clearing house format specifically designed for check safekeeping.

Dubbed the TRX, the new format will allow a single ACH entry to carry information for several truncated checks, according to Steve Kopiec, NACS' chairman. Kopiec also is vice president at Manufacturers Hanover Trust Co. Currently, there is another format, known as the TRC, which has been in existence since 1981 and is used by 10 banks. It has the capability to carry payment information for 1 check item.

The new TRX format, on the other hand, will contain check payment information for several check items. The addenda information will be in the ANSI X 12.4 format and would describe in detail the payment information. "It is almost like an electronic cash letter," he told us.

Both formats will co-exist until some point in the future, with the TRC possibly being used for less complicated return items.

The new format boasts several advantages, Kopiec said. It is very flexible, will carry information for several truncated checks at a much lower price, and will allow for more "data compaction." For example, he explained, if many checks are being sent to the same bank, there is no need to repeat the **routing number** . Similarly, if many **checks** are being sent to the same bank with the same account number, the account number does not have to be repeated.

Under the NACHA rules, TRX will be allowed to operate on April 10 of this year and the first agencies to test it will be the Federal Reserve Bank of Atlanta and the Federal Reserve Bank of Minneapolis. (Steve Kopiec, Manufacturers Hanover Trust Co., 212/623-3460.)

... checks are being sent to the same bank, there is no need to repeat the **routing number** . Similarly, if many **checks** are being sent to the same bank with the same account number, the account number...
19890222

3/7,K/7 (Item 3 from file: 636)

01031958 Supplier Number: 40450517 (THIS IS THE FULLTEXT)
NEW PROCEDURES OUTLINED
Corporate EFT Report, v8, n15, pN/A
July 20, 1988
TEXT:
Under the new system, SSA will ask applicants to take to the agency financial documents, such as checks, passbooks or other items, when they are applying in person for their benefit payments.

SSA then will **verify** enrollment data, including the **routing** transit **number** , depositor-account number and the applicant's identity.

SSA personnel would enter this information into the agency's computer and the recipient's first check will be issued by direct deposit.

Last month, receiving depository financial institutions began to receive SSA and Supplemental Security Income (SSI) through the automated clearing house (ACH) for customers who have not completed direct deposit enrollment forms. FMS does not prenote these payments and the actual live credit will be the financial institutions's first notice of a new automated clearing house payment.

Receiving depository financial institutions are asked not to reject these payments unless they cannot be properly posted. If payments cannot be posted, receiving depository financial institutions are asked to return the payment through the ACH so that the SSA can make other payment arrangements.

If the payment is not correct, a sign-up form may be prepared. "Correction Requested" should be marked in bold letters across the top of the form.

After the form is completed, it should be mailed to the financial institution's regular SSA office for enrollments. Currently, this new method applies only to SSA and SSI payments. FMS hopes to expand this process to other types of payments. The new method does not replace receiving depository financial institutions' enrollments for direct deposit, but is merely a new service that offers a simplified alternative to current enrollment methods.

For additional information about this new method, financial institutions can contact the FMS Customer Assistance staff in their regions.

SSA then will **verify** enrollment data, including the **routing** transit **number** , depositor-account number and the applicant's identity. SSA personnel would enter this information into...
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3/7,K/8 (Item 4 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

01021356 Supplier Number: 40389724 (THIS IS THE FULLTEXT)
CHECK TRUNCATION
Financial Services Report, pN/A
May 18, 1988
TEXT:
The Expedited Funds Act directed the Federal Reserve to consider electronic alternatives to improve check processing, including check truncation in which the MICR-line information on a check is obtained and presented to the paying bank electronically while the presenting bank keeps the paper checks.

The Reserve Bank delivers the MICR-line data of each **check** , including the **routing number** , account number, **check** number, and dollar amount--to the paying bank or its agent on magnetic tape or by data transmission, as requested by the paying bank, to expedite the returned check process.

When the MICR data is received, the paying bank processes and posts this data to the correct customer accounts. If a check is returned, the paying bank notifies the Reserve Bank by the published deadline on the next business day following receipt of the MICR data.

The Federal Reserve Bank retrieves the actual checks and initiates the return process to the depository bank. In addition, the paying bank may request retrieval services--such as information from a trunicated check, a copy of a check or the original check itself.

When the trunication service begins in July, it will be open to paying banks choosing to take part. Participating paying banks in the Fed's local trunication service may set a dollar limit on those checks eligible for truncation.

Under interbank truncation, the amount is determined by National Association for Check Safekeeping (NACS) rules, now having a $2,500 limit on checks eligible for truncation.

The Reserve Bank delivers the MICR-line data of each **check** , including the **routing number** , account number, **check** number, and dollar amount--to the paying bank or its agent on magnetic tape or...
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3/7,K/9 (Item 1 from file: 160)
DIALOG(R)File 160:Gale Group PROMT(R)

01999825

Not all endorse the changes
USA Today September 1, 1988 p. 1B,2B
ISSN: 0734-7456

Checks must be cleared faster by financial institutions according to new Federal Reserve rules taking effect on 9/1/88. The rules comes following a law passed by Congress in response to complaints by consumer groups that financial institutions were holding on to checks even after they had received payment on them. The new rules also require that financial institutions must clearly indicate on the back of the **check** its name and a **routing number** for quick return of bad **checks** . Retailers must also limit their endorsements to a 1.5 in band on the back of checks. Because of this, several financial institutions are also demanding that customers keep their endorsements to a 1.5 in band on a particular side of the check. The rules have also led to great demand for 1.5 in rubber stamps. Comments of retailers and financial institution exeutives on the new rules are included.

Publication Year: **1988**
... new rules also require that financial institutions must clearly indicate on the back of the **check** its name and a **routing number** for quick return of bad **checks** . Retailers must also limit their endorsements to a 1.5 in band on the back...

3/7,K/10 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

05226286 SUPPLIER NUMBER: 10385721 (THIS IS THE FULL TEXT)
'Cinderella' test of check truncation promises savings.
Gage, Theodore Justin
Corporate Cashflow Magazine, v12, n2, p17(3)
Feb, 1991

TEXT:
Check truncation has been talked about for years. For Arlene Puttonen, controller of Arrowhead Promotion and Fulfillment Co. Inc., Grand Rapids, MN, it's reality.

"We're just a small company," she says, "so it feels strange to be told we're on the cutting edge and to have the Federal Reserve and NACHA hovering over us."

But like Cinderella, plucked from the ash pit to become a princess, Arrowhead is paving the way for a breakthrough that could lead to nationwide truncation.

For corporations, nationwide check truncation could mean faster and more accurate account reconciliation, faster notification of bad checks and decidedly lower check processing costs. The National Automated Clearing House Association and the Fed plan to follow the Arrowhead test with a full-scale, nationwide pilot in mid-1991.

Ms. Puttonen approached the Minneapolis Fed and put match to tinder, so to speak. Arrowhead, which mails consumer rebate checks for corporate promotions, was looking for a way to cut its check-processing costs. Larger promotion and fulfillment firms, because of their greater volume of checks, were getting considerably lower per-item check processing charges from their banks than Arrowhead was.

"It was hard to charge our clients a competitive price because of our high processing costs," says Ms. Puttonen.

When she asked the Minneapolis Fed for relief, the bank saw an

opportunity to test new truncation technology and to provide Arrowhead with the cost savings it needed.

"Arrowhead is the perfect company to test truncation," says Ted Umhoefer, vice president, check processing for the Minneapolis Fed. "It has the high volume of checks required to give us a good sample, but the dollar amounts are low. If there's a problem with a truncated check falling through the cracks, we're out maybe three dollars. If we lost a $30,000 check, that could get pretty expensive."

Arrowhead has printed the digit "3" in the 44th position of the MICR lines on over a million consumer rebate checks, a flag to commercial and Fed banks that the checks are eligible for truncation when consumers deposit them at local banks.

If nationwide truncation existed, local commercial banks would scan and truncate the check, storing the physical item and creating an ACH debit to be sent Arrowhead's bank. However, since no commercial banks truncate checks, several Federal Reserve Banks are handling truncation at their expense to facilitate the test.

Commercial banks identify the "3" and notify their regional Fed bank when returning the physical checks through the Fed system. The Fed bank then holds the check, creates an ACH debit and sends it through the system to Arrowhead's bank.

Arrowhead receives daily electronic account reconciliation reports from its bank on these items, in addition to regular check listings.

One technical obstacle to check truncation is that currently a separate ACH item with a separate **routing number** must be created for each **check** that's truncated. This makes truncation as expensive or more expensive than returning physical checks.

However, the Fed and NACHA are using this pilot to perfect both software that converts check information into ACH items and a new ACH "TRX" format, which allows multiple payments to be placed in the addenda records of one ACH transaction.

Eventually, the cost should drop to about 1.6 cents for the lead item, or header, and about a half cent for each additional transaction within one ACH item. Mr. Umhoefer says a nationwide truncation program could knock about three cents per item off the current cost of processing physical checks--a significant savings that can be passed on to corporations.

Arrowhead already is saving money, and Ms. Puttonen expects truncation to reduce her processing costs eventually from $13 per 1,000 items to $4 per 1,000.

"We also expect to reconcile checks faster because items will come to us in neat, electronic reports," she explains. "That should make it easier to verify each item."

Arrowhead cuts millions of checks annually, and mistakes occur. For instance, a check for $3 is misprinted as $3,000. Arrowhead has to eat the loss if the item isn't caught during reconciliation and payment stopped before the consumer's account is credited. Scanning software used in conjunction with electronic itemization makes it more likely such mistakes will be caught--during the company's reconciliation process.

After the Arrowhead test, which should be completed soon, Federal Reserve banks and NACHA will prepare the mid-1991 pilot, the first major check truncation test.

"We plan to include about six issuing banks and their corporate customers and about 12 financial institutions throughout the country that will have the software and technology to truncate and safekeep checks," Mr. Umhoefer says.

The small number of truncating banks will make it easier to trace items that will miscarry. By using corporations that cut large numbers of small-dollar checks, the risk will be smaller if items do get lost or

waylaid.

If the test works, the Fed and NACHA will distribute the TRX technology and check-to-ACH conversion software to banks across the country. The price, if any, has not been determined.

Corporations that issue many checks stand to gain the most from truncation's lower processing fees, but every firm should benefit. It's also easier to reconcile ACH items than physical checks.

The downside of speedy truncation will be a slight loss of float. NACHA believes cheaper processing and easier reconciliation will more than make up for lost float.

Ms. Puttonen agrees. "We'll lose a little float," she says. "But if truncation gains national acceptance, we'll more than offset this loss with both tangible and intangible benefits."

CAPTIONS: ACH trade payments jump. (graph)

... technical obstacle to check truncation is that currently a separate ACH item with a separate **routing number** must be created for each **check** that's truncated. This makes truncation as expensive or more expensive than returning physical checks...

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3/7,K/11 (Item 2 from file: 148)

04119174 SUPPLIER NUMBER: 08015799 (THIS IS THE FULL TEXT)

Life with Reg CC. (Regulation CC: expedited funds rules)

Hall, Daniel

ABA Banking Journal, v81, n10, p118(3)
Oct, 1989

TEXT:

Life with Reg CC

From the start, many industry fortune tellers predicted that Regulation CC would disrupt check processing operations.

And since the regulation became effective--Sept. 1, 1988--their tea leaves have proven to be accurate. One example is checks returned to depositary banks due to insufficient funds or other reasons. It can now take longer for a paying bank to process such checks if it elects to "qualify" them with data that permits less-expensive processing by the Fed or by an intermediary bank involved in the return process.

Other predictions about the costs of Reg CC were often right on the mark. Here are some examples:

* Education has been costly.

Banks have had to spend to educate consumers about changes in funds availability policies. A Federal Reserve Board survey revealed that one large bank spent 32.6 cents per customer for printing and distributing disclosure information.

Businesses have had to be taught the proper place to put endorsements. In addition, many banks have bought materials to educate tellers and customer service representatives. Some are quite expensive--one consulting firm charges as much as $10,000 for an educational personal computer diskette and an accompanying videotape. Other banks have sent employees to Fed and other seminars.

"Educating employees and customers has been a big-ticket item," says Vern Canfield, senior vice-president and cashier, First Interstate Bank of

Washington.

* Some correspondent banks have seen a decline in income for returned check service.

* In March, the Fed sharply increased fees for handling return items.

Fortunately, some predictions have not come true--to date.

For example, bankers generally have not seen any increase in fraud that can be attributed specifically to the regulation.

Background. Reg CC represents the Fed's implementation of the Expedited Funds Availability Act. The law includes two stages.

The first, temporary stage became effective Sept. 1, 1988. In that stage a depositary bank (the institution in which a check is first deposited) must generally make the proceeds of local checks available for withdrawal by the third business day following deposit. So, for example, the proceeds of local checks deposited on a Monday must be available for withdrawal by the following Thursday.

The depositary bank must make the proceeds of nonlocal checks available for withdrawal by the seventh business day following deposit. Thus, a Monday deposit must be available for withdrawal by Wednesday of the following week.

On Sept. 1, 1990, those time periods are reduced to the second business day for local checks and the fifth business day for local checks and the fifth business day for nonlocal checks. (Numerous other rules and various exceptions also apply.)

Under the regulation, a local check is one deposited in a depositary situated in the same Federal Reserve district as the paying bank. A nonlocal check is a check deposited in an institution that is not in the same check processing region as the paying bank.

Endorsement demands. Meeting the objectives of the new regulation meant that uniform placements of endorsements would be essential. Previously, there generally were no specific standards concerning their placement, which often resulted in overlapping endorsements. In addition, many endorsements did not include the depositary bank's routing number.

Reg CC specifies the locations of different endorsements. For example, the customer's signature area must be within 1.5 inches from a check's trailing edge. (The trailing edge corresponds to the left edge of the face of a check).

The depositary bank's endorsement area begins at the end of the customer space and extends to within 3 inches of the leading edge. The depositary bank must include the 9-digit routing number, its name and location, and the endorsement date. It must record this data in black or purple ink. Subsequent endorsements appear in the remaining space, and must include the institution's routing number and endorsement date. This must be recorded in a color other than purple.

There are no explicit penalties or fines for not complying with the dnrosement standards. However, noncompliance can increase the risk of loss to a depositary bank if the appearance of its endorsement could be proven to be the reason a check did not clear according to the new funds availability schedule.

The new endorsement standard has generated several actions.

* Check manufacturers have been printing checks that use lines that indicate the three endorsement areas.

* Banks had to obtain new endorsement plates for encoding machines--existing plates typically did not include routing numbers. The expense of that changeover varied according to the number of encoding machines a bank has. At First Interstate Bank of Washington, Seattle, the cost totaled about $4,000 for 100 machines, according to a spokesman.

Poor impressions. There are still problems with the depositary endorsements, however.

One is a matter of equipment. Poor imprints from the endorsing plates sometimes render the data unreadable, according to Willis I. Else, senior

vice-president, National City Corp., Cleveland Ohio. He explains that the trouble can be partly due to the capabilities of encoding, proofing, and sorting machines. Else, chairman of ABA's Return Item Task Force and a member of the association's Transaction Processing Committee, says manufacturers are working to improve imprint quality in new machines.

"In some cases, the problem is also due to the plate material, which can be either rubber, plastic, or metal," says Else. He indicates that rubber and metal provide the best imprints, but the cheaper prices of plastic plates have contributed to greater use of them.

Banks still have troubles with customers, in spite of campaigns to educate them on endorsements. Some say retailers are a particular problem. That's because many are accustomed to using a large amount of space to record such data as driver's license numbers.

Industry observers agree that new techniques should be helpful in speeding check processing. With that in mind, and Fed is studying the placement of machine readable depositary bank endorsements on checks. This would utilize bar code technology similar to that used in supermarkets and retail stores and would enable faster processing of checks by paying or returning banks (an intermediary bank handling a returned check).

Many unhappy returns. To lessen the risk to banks of granting faster funds availability, Reg CC includes new procedures for expediting the return of dishonored checks to depositary banks.

For example, the paying bank no longer has to return a check to the bank that presented it. Instead, the paying bank may return a check directly to the depositary bank, to a returning bank, or to the Fed.

To further speed up the return process, banks can submit a check that has been prepared for automated processing by placing a strip on the **check** with such data as the **routing number** of the depositary bank and the amount of the check. Alternatively, the paying bank can put that data on an envelope in which the check is placed. Checks prepared in either way are referred to as "qualified." Checks without that data are "raw."

At some banks that have elected to submit qualified checks, the procedures have slowed down handling. That's because clerks have to identify the depositary bank and then qualify the checks. (Previously, returned checks usually took the same route they took to get to the paying bank, often passing back through several banks.)

"The new qualifying procedures may add an extra day to the handling of returned checks by the paying bank," according to Richard Re, vice-president at Bankers Trust Co., New York.

In addition, the Fed says many of the checks submitted as "qualified" have required extra work before they could be processed. This has been due to such problems as wrong or unreadable routing numbers and envelopes of poor quality. In some extreme cases this has caused temporary equipment shutdowns.

That extra work meant hiring new permanent employees, says Ted Umhoefer, vice-president, check processing, Federal Reserve Bank of Minneapolis, Minn. In addition, Fed personnel have had to take time to advice banks about the problems.

What's more, the Fed has consistently been receiving more "qualified" checks than it estimated it would handle. Initially, 60% of deposits were in qualified form; now around 80% are. Because banks pay less for the handling of "qualified" checks, the Fed's income has not hit anticipated levels. (Overall, the Fed's returned check volume has increased 25% since the implementation of Reg CC.)

These economics forced the Fed to take steps. In March the agency published a new and sharply higher return item price schedule--less than a year after it published its first schedule.

The new one became effective May 1. Increases for handling qualified checks averaged 14 cents, pushing the average fee to 21 cents. Fees for

handling raw items generally went up by 19 cents, raising the average fee to 72 cents.

Impact on income. Higher costs are only part of the economic impact of Reg CC. The rule has also eaten into some correspondent banks' income from return item processing, according to Ned Miltko, senior vice-president, Littlewood, Shain & Co., a Wayne, Pa.-based consulting firm. That's because many of their customers are instead sending returned checks directly.

"Our correspondent services have included returning checks," says National City's Else. "So the current trend has affected our income generated by that service. Return income is down by more than 10%."

Some banks, however, have seen opportunity in Reg CC. They offer services geared specifically to routing return items from paying to depositary banks. This puts them in direct competition with the Fed.

Bankers Trust is among this number. "We started our service on Sept. 1, 1988," says Re. "We have 40 customers, and we handle raw and qualified returned checks."

The bank has taken a very competitive position. "Our rates are about half the fees the Fed charges for raw returns," says Re. "Our fees for qualified items are also lower than the Fed's."

No wave of fraud. Prior to implementation of Reg CC, many industry observers predicted fraud would skyrocket. So far, this hasn't happened. Still, some banks are now taking steps to lessen their potential exposure.

For example, Shawmut Bank, N.A., Boston, is developing new account opening procedures and providing tellers and customer service representatives with the tools to verify information.

"For example," says William F. Gearin, vice-president and director of corporate security, "we just bought 420 copies of the ABA Social Security Number Verification Manual."

Gearin says fraud attributable to Reg CC has not been a problem. However, the risk is there, he says, and that has led his and other banks to begin thinking differently about new account openings and related activities. The idea, continues Gearin, is prevention, rather than investigation after the bank has been ripped off.

... a check that has been prepared for automated processing by placing a strip on the **check** with such data as the **routing number** of the depositary bank and the amount of the check. Alternatively, the paying bank can...

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